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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/521,874

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Ralf Spitzl

RO0968US (#90568)

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EXAMINER

MAYEKAR, KISHOR

ART UNIT

PAPER NUMBER

1795

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DELIVERY MODE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/521,874	<b>Applicant(s)</b> SPITZL ET AL.	
	<b>Examiner</b> Kishor Mayekar	<b>Art Unit</b> 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 04 November 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-7, 13-17 and 24-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7, 13-17 and 24-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)         | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Response to Amendment*

1. The amendment of 4 November 2009 has been entered. Claims 1, 4 and 7 have been amended. Claims 8-12 and 18-23 have been withdrawn. New claims 24-30 have been introduced. Claims 1-7, 13-17 and 24-30 are pending in this application with claims 1 and 27 being independent claims.

2. Applicant's arguments with respect to claims 1-7 and 13-17 have been considered but are moot in view of the new ground(s) of rejection.

### *Drawings*

3. The drawings were received on 4 November 2009. These drawings are acceptable.

4. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the **flow-forming elements arranged in** the plasma reactor must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement

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drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

5. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because **reference character "17" in Fig. 2** has been used to designate both drilled holes and perforated orifice plate. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top

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margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

6. The drawings are objected to because **new Fig. 5** shows something in the reactor chamber 2 but not "a catalytically acting gas" as stated by Applicant in page 10 of the remarks filed 4 November 2009. **Clarification is needed.** Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the

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applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Specification***

7. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: **proper antecedent basis for the flow-forming elements being arranged in the plasma reactor.**

***Claim Rejections - 35 USC § 112***

8. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action

9. Claims 6, 25, 27, 29 and 30 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 6, the recitation "the feed elements form flow-forming elements" is confusing when claim recites "flow-forming elements ... arranged in the plasma reactor".

In claim 25, the recitation "the film-forming elements for forming the flow of gases and cause ..." is confusing as to its meaning.

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In claim 27, the recitation "in a plasma chamber of a plasma reaction" is confusing as to its meaning. The recitation "the components" lacks antecedent basis.

In claim 29, the recitation "the reaction tube" lacks antecedent basis.

In claim 30 the recitation "the recombination zone" lacks antecedent basis.

***Claim Rejections - 35 USC § 102 and USC § 103***

10. Claims 1-6, 13-16, 24 and 27-29 are rejected under 35 U.S.C. 102(b) as being anticipated by Gillespie et al. (US 6,126,779). Gillespie's invention is directed to a plasma enhanced gas reactor and a gas plasma processing. Gillespie discloses that the plasma reactor comprises a gap **11** between two electrodes **106** and **107** (Figs. 1-2) across which a second reactant gas flows by venturi effect (c. 2, l. 51-65) and in which an annular plasma is formed (c. 2, l. 51-65), wherein the gap is adjustable (c. 2, l. 16-21). The electrodes with the gap read on the recited flow-forming elements, the flow of the second reactant across the gap reads on the recited flow-reduced zone, and the forming of the annular plasma reads on the stable plasma.

As to the subject matter of claim 3, the zone **204** reads on it.

As to the subject matter of each of claims 4, 5, 13-16, 24 and 29, Gillespie discloses it in Fig. 1.

As to the subject matter of claims 25, 26 and 28, it is or would be inherently in Gillespie's teachings.

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11. Claims 7, 17, 25 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gillespie '779. Gillespie as applied above further discloses in c. 3, l. 62-67 the provision of catalyst. The differences between Gillespie and the instant claims are each of the recited catalyst and the process limitation of the flow-film forming elements. As to the first difference as claimed in claim 7, the subject matter as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified Gillespie's teachings because the selection of the catalyst as being heterogeneous catalysts or in the recited form would have been within the level of ordinary skill in the art for the reaction with the catalyst and specially when the catalysts are in the form of granules. This would also apply to claim 17 when the catalysts are in the form of granules.

As to the second difference as claimed in claims 25 and 26, since it is a process limitation, it cannot be given any patentable weight in a device claim.

12. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gillespie '779 in view of Bayliss (US 5,418,430). Gillespie further disclose in c. 3, l. 9-12 that the second reactant gas is oxygen (Fig. 2). The difference between Gillespie and the instant claim is the recited introducing. Bayliss shows the introducing of a second reactant gas as claimed. The subject matter as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified Gillespie's teachings



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because the selection of any of known equivalent means for introducing the second reactant gas with a swirling motion would have been within the level of ordinary skill in the art.

### ***Response to Arguments***

13. Applicant's arguments filed 4 November 2009 have been fully considered but they are not persuasive because of new grounds of rejections as set forth in paragraphs above.

### ***Conclusion***

14. Claims 1-7, 13-17 and 24-30 are rejected.

15. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

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extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kishor Mayekar whose telephone number is (571) 272-1339. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen can be reached on (571) 272-1342. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Kishor Mayekar/  
Primary Examiner, Art Unit 1795